|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Aquatic- Marine (salt water), Fresh water,** | **Unusual/differences** | **Environmental conditions** | **Plant types** | **Animal types** | **Plant adaptations** | **Animal adaptations** |
| Marine |  | Density & salinity varies  Depth determines light, temp | phytoplankton | zooplankton |  |  |
| **Photic- with light** | * Coral reefs | * Warm, shallow seas | Rich in plankton | Fish, sponge, shell fish, |  | Coral- animal builds on ancestors to make reefs |
| Estuaries, (& bays) | * Nursery * Partially surrounded by land | Where rivers & oceans meet  Brackish water (mix)   * changes w/tide | plankton | Fish, birds, shrimp, |  |  |
| Marsh  Ex. everglades | Brackish water (mix) | Grasses- cord, eelgrasses | Snails, crabs, shrimp, predators, birds | Salt-tolerant plants | Filter feeders, |
| Shores Intertidal zone- high levels sun, nutrients, oxygen | Rocky- | Tidal pools | Seaweed, algae,  phytoplankton | Sea stars, starfish, barnacles, anemones | Seaweed- attach to bottom- away from shore | Animals attach |
| Sandy |  | Seaweed, algae,  phytoplankton | Clams, worms, snails, crabs | float | burrow |
| **Aphotic – no light** |  | Complete darkness | NONE | Predators, filter feeders | NONE | Flashlight fish |
| Freshwater | Shallow- | warm in summer  fast flowing = more oxygen | catttails | Tadpoles, aquatic insects, turtles, worms, crayfish, dragonflies, fish |  | burrowing |
|  | Deep water – stays cold & more dense | Temp affects organisms  Depth limits light=limits life  Slow decay & recycling due to cold temp | Algae & a few aquatic plants |  | Few plants- |  |
|  | Wetlands | * swamps | Trees- cypress trees & mangrove |  | Cypress knees |  |
|  | Marshes | grasses |  |  |  |
| Bogs- water from rain- water does not flow through |  |  |  |  |
| **Terrestrial**  **Biomes** | **Unusual/differences** | **Environmental conditions** | **Plant types** | **Animal types** | **Plant adaptations** | **Animal adaptations** |
| Tundra | Alpine- mountain  Arctic- north ple  Permafrost-frozen soil  Northern lights  24 hr day/nights | 0-10 C  Max. 30 inch rain  Longest winters | Grass, sedge, shrubs  lichens | Insects, virds, wolves, reindeer, caribou  Anthing arctic | Short roots | Migration  Hibernation  Snow camo |
| Taiga  Coniferous forest  Boreal | Acidic soil b/c needles | -11 to 16 C  Most rain in summer  6-10 month growing season | Larch, firs, pines, spruce, worlds largest trees | Deer, elk, moose, bear, mtn lion, wolf, rabbits, birds | Triangle shape, evergreen deedless, cones | Snow camo, hibernate, migrate, burrow |
| Temperate Deciduous forest | Soil rich in humus & cla | 75-150 cm rain  Temp usually above 0C  140-300 day growing season | Oak  Maple  Hemlock | Deer  Birds  reptiles | Trees lose leaves | Animals blend in |
| Tropical rain forest | Soil w/few nutrients  Desertification | 250-450 cm rain  25 C  No seasons | Broadleaf evergreen  Strangler fig  buttresses | Birds snakes, amphibians  monkeys | Eyyphyte- orchid  Emergent layer  Canopy  understory | Bright colors = poison |
| Grassland | Prairie/Plains | 25 cm rain  Hot summer/cold winter | grass | Badger  Snakes, rabbits, coyotes, birds | Fire- no major  affect | burrow  Hibernate  Migrate |
| Tropical Savanna | Largest size & # of herbivores. Dry summer  1 season | Acacia trees  grass | Zebra, giraffe, elephants | Plants produce poisons when eaten | Long neck |
| Desert | Hot day  Cold night | Less than 10 cm rain  8-34 C | Cactus  Joshua trees | Insects, birds  Reptiles  camels | No leaves🡪 needles  Stem stores water | Camo, Nocturnal  Store water  Estivation- heat hibernation |

Limiting Factors-

Affected by latitude & altitude

Range of Tolerance

Succession (primary & secondary, pioneer species, climax community)